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The Impact of Corporate Reputation on Performance: Some Danish Evidence

CASPAR ROSE, *Copenhagen Business School*
STEEN THOMSEN, *Copenhagen Business School*

We investigate the relationship between a firm's reputation and financial performance. Our results challenge the conventional wisdom since we find that corporate reputation does not impact firm value (the market to book value of equity) whereas corporate financial performance improves corporate reputation. The policy implication of the findings is that the relation between reputation and performance is not as straightforward as argued in the literature. We do not question that reputation is vital for the survival of the firm in the long run, but argue that it may influence stock market performance via profitability and growth rather than having a direct impact on the stock markets. If management is concerned with enhancing shareholder value, it should be concerned with the business impact of corporate reputation. Moreover, if management is concerned with the firm's image, maximizing shareholder value is not a bad start.

Keywords: Corporate reputation, Financial performance, Shareholder value, Firm value, Firm image, Investor relations

Introduction

Management in large corporations devotes a substantial part of its resources and effort to maintaining and improving their corporation's reputation, which are vital for the success and survival of the firm. A good corporate reputation possesses the characteristics of an intangible asset and it may provide the corporation with a competitive advantage thereby generating an abnormal return (see Hall, 1993, who suggests the ratio of market value to book value is an adequate proxy for intangible assets). To illustrate, when an acquirer buys a corporation with a valuable reputation or image, the acquirer not only pays for the assets in place but in addition, for the reputation in the form of goodwill, which reflects the monetary value of reputation. Thus, since consumers in many situations are not able to tell the quality of the goods offered for sale prior to purchasing, a strong reputation can serve as a signal about the underlying quality of the corporation's products (see Shapiro, 1983; Kreps and Wilson, 1982; as well as Milgrom and Roberts, 1982). Corporations may create a trademark where the corporation after registration receives exclusive property rights over a distinct symbol where competitors may be sued if they copy the symbol. Trademarks help to solve the problem of consumer ignorance about the quality of the product since a trademark may also serve as a signal for quality. Furthermore, trademarks reduce the costs to consumers of searching for a product with specific qualities. In addition, a corporation's reputation does not only affect its relation with its customers but also other stakeholders, such as potential employees (see Stuart, 2002; for an analysis of the issues of implications of employee identification with the corporate identity). A good reputation may attract well-educated employees with a higher productivity, since it provides employees with private benefits.

Suppliers and contractors represent other important stakeholders, which the corporation is dependent on and engaged with, often over long periods of time. The reason is that a good reputation may lower transaction costs since reputation allows a firm to save on

the costs of writing complete contracts (e.g. Willamson, 1985). Thus, suppliers and contractors would spend fewer costs on monitoring activities, e.g. investigating the firm's creditworthiness etc. and hence would be more willing to engage in contracts with the firm, for example Bromley (2002) argues for the psychological and social processes to understand reputation stressing collective social phenomena. Moreover, a strong corporate reputation may serve as a strategic defence device in the continuing struggle between competing rivals making it more difficult to replicate and mimic the characteristics of the corporation with the superior image.

Therefore, it seems plausible, that reputation impacts corporate financial performance. However, one should notice, that when a corporation experiences a superior financial performance it may influence its reputation positively i.e. the causation may run in the opposite direction, see McGuire *et al*. (1990) for an early study, which discusses this aspect as well as Keats (1990), who addresses the problem of causation between firm diversification and performance. The article takes this issue into consideration, and the following related hypotheses are tested.

Hl: A good reputation improves corporate financial performance

H2: High corporate financial performance improves a company's reputation

There is no common agreed definition of what is meant by a corporation's image or reputation although there are several suggestions in the literature. Fombrun and Shanley (1990) define reputation as 'a perceptual representation of a company's past actions and future prospects that describes the firm's overall appeal to all its key constituents when compared to other leading rivals', reflecting reputation as an organizational attribute associated with stakeholders' perceptions of the firm. Groenland (2002) proposes another approach using the so-called Reputation Quotient that seeks to capture the notion of a corporation's reputation. The Reputation Quotient has six dimensions; emotional appeal, products and services, vision and leadership, workplace environment, social and environmental responsibility, and financial performance.

Management theorists tend to agree that reputation is considered a unique part of the corporation's existence, even though their definitions are often hard to test empirically since they rely on definitions that are almost impossible to test statistically (e.g. Pruzan, 2001; Ind, 1990; and Bernstein, 1984). Balmer (2002) reports the findings of a literature-based study of what clarifies the dimensions of an organization's identity. Balmer (2002) adds three new elements: environment, stakeholders and reputation, emphasizing the multidisciplinary perspectives in relation to identity studies.

As a result, we need a more operational definition of a corporation's reputation suggesting that it is identical to all stakeholders' perceptions of a given firm, i.e. based on what they think they know about the firm, so a corporation's reputation may simply reflect people's perceptions. These perceptions are created by the firm's history from past actions. Specifically, a corporation's image includes the perceptions of all stakeholders such as; suppliers, customers, shareholders, employees and the community, noticing that each stakeholder needs to be addressed separately through the firm's communication strategy see Corley *et al*. (2001) for a discussion of the effects of images of corporate social performance on internal stakeholders. Reputation management is essential in order for the corporation to protect its image and survive in the end. This is related to risk management, which is essential when capital markets become very volatile and the behaviour of investors may be governed by fear instead of rational decision-making. Downside risk measures may serve as a way in which management may be forced to formulate a best response strategy to various scenarios that might have a negative impact on the corporation's image. A sudden negative event exposed in the media to the public could damage the corporation's image and reputation. For instance, consider Shell's decision to dump one of its platforms in the North Sea a few years ago (the case of Brent Spar which is analysed in Zyglidopoulos (2002)). If management is not able to persuade investors in a credible way, that it can handle potential future threats to the corporation's reputation investors will lose confidence (as a result the corporation may suffer from a substantial depreciation in the corporation's stock price).

One way in which management may enhance the corporation's reputation is to report 'ethical statements' or 'social accounting' together with the corporation's traditional annual accounts. Besides reporting the firm's balance sheets, the income statement and various financial key figures, the corporation furthermore voluntarily reports other key figures of public interests. For instance, how many resources are used in the manufacturing process and how many toxic substances the corporation emits (see Deegan and Rankin, 1997; for a critical analysis). The purpose of these initiatives is to improve the corporation's image and receive some goodwill from stakeholders. From an economic perspective, such initiatives should be implemented if the marginal benefits from an enhanced image exceed the marginal costs of gathering and reporting the information. Besides, when the law does not mandate social accounting, it may serve as a credible signal where the high quality responsible firms may become separated out from the low quality firms. Since it is more costly for low quality firms to send a high quality signal to the surroundings e.g. by manipulating social statements, such low quality firms would not engage in such activities in the first place. The reason is that there is a high probability that these low quality firms may be revealed and this would restrict

these firms' social accounting activities. The surroundings would then infer from any silence from a given firm that it is of low quality thereby reducing the problem with asymmetric information.

Our results seem to somehow challenge conventional wisdom since we find that H1 is not confirmed but, on the other hand, we cannot reject H2 i.e. corporate financial performance affects reputation. One may therefore question the actions taken by management seeking to improve the firm's image, since such initiatives do not seem to be reflected in performance when performance is linked to the notion of shareholder value. Thus, both image and firm value are significantly autocorrelated indicating that past values of image and firm value affect present values. In order to evaluate the relevant dimensions of corporate image we employ a factor analysis. It turns out that the survey measures are so highly correlated that they cannot meaningfully be attributed to more than one underlying factor. This 'image factor' explains 2/3 of the variance in the 10 image measures.

The article is organized as follows. In the second section, we review the literature and in the third section, we describe our data and methodology. The results are presented in the fourth section followed by a discussion in the final section, which also contains a summary.

Literature

The literature dealing with corporate reputation is extensive but reflects different methodological approaches ranging from traditional management theory to game theory (for an example of the latter see Webb and Farmer (1996)). Studies of the relation between corporate reputation and performance are relatively scarce although in recent years a number of articles address this important issue.

Fombrun and Shanley (1990) examine reputation building and corporate strategy using a sample of 292 large US firms. They acknowledge that firms compete for reputation status, in which managers attempt to influence other stakeholders' assessments by signalling a firm's salient advantages (from a mix of signals derived from accounting, and market information, media reports and other non-economic sources). They perform an empirical analysis and find that historical performance and other non-economic cues influence reputation.

McGuire *et al*. (1990) conduct a study based on data from *Fortune Magazine*'s survey of corporate reputation where they examine the relation between firm quality and firm performance. They address two major issues, namely: (1) the degree to which perceived firm or management quality influences the subsequent firm financial performance, and (2) the degree to which historical measures of firm financial performance forecast future perceptions of firm or management quality. They find that financial measures of both risk and return influences perceptions of firm quality. Moreover, perceptions of firm quality though correlated with the subsequent performance of specific financial measures, were generally more closely related to prior financial performance than to subsequent performance.

Our paper is in line with a recent article by Roberts and Dowling (2002) who examine the relationship between corporate reputation and superior financial performance. Their data sample is based on a sample from 1984–1998 of *Fortune*'s report of America's Most Admired Corporations. Their main finding is that firms with relatively good reputations are better able to sustain superior profit outcomes over time. Roberts and Dowling explicitly recognize the problem of determining which way the causation runs, although their approach does not coincide completely with the methodology of this article. They decompose overall reputation into a component that is predicted by previous financial performance, and one which is 'left over', and find that each element supports the persistence of above average profits over time.

Kotha *et al*. (2001) examine the relationship between three types of reputation building activities for Internet firms: marketing investments, reputation borrowing, and media exposure — and firm performance. Their findings suggest that reputation-building activities may be one of the key determinants of competitive success. At the same time, according to the authors, it raises some questions regarding the durability of the impact of such activities.

Michalisin *et al*. (2000) test the so-called 'resource based view' in which firms achieve a sustainable competitive advantage and earn superior profits by owning and controlling strategic assets, such as reputation, know-how and organizational culture. Their dataset consists of 100 randomly selected Fortune 500 and Service 500 firms. The authors find that the relation between intangible strategic assets and relative return on shareholders equity is significant.

Albert (1995) explicitly deals with the problem of causality. Albert studies the existence of simultaneous effects among the variables, production, product differentiation and innovation. The author finds no positive effect exists from product differentiation to innovation, i.e. once technical improvements have been established, firms exchange the barriers to entry created by brand image for the real barriers established by innovation itself.

Agarwal and Prather (1997) examine mutual fund performance from 1981 to 1994, analysing whether economic rent can be obtained through the selection of sales methods. Specifically, they seek to uncover

whether direct sales or mass marketing produces economic rent (abnormal returns) under the assumption that those rents would be passed on to consumers to build a 'high quality' image to differentiate the product line. They find that no-load funds produce superior net returns except in the aggressive growth category.

As a matter of fact, some firms do choose to voluntarily report non-financial information in the annual accounts. Deegan and Rankin (1997) conduct a study of how the disclosure of environmental information affects various stakeholders' views of the firm. They investigate how environmental information is ranked in importance to several other items of social and financial information. The results indicate that the majority of the annual report users surveyed believe environmental information to be material to their decisions, and that they seek the disclosure of this information in the corporate annual reports. However, the results show that the majority of the users rank environmental information behind traditional financial information such as profits, net assets, cash flows and dividend payments.

Barry and Epstein (2000) test a number of hypotheses related to popular management techniques using informational reports on quality, empowerment, and teams, including a measure of the implementation of total quality management programs. They discover some interesting findings; in particular, that companies associated with popular management techniques did not have higher economic performance. At the same time, they find that companies were more admired, perceived to be more innovative, and rated higher in management quality.

Finally Greenley and Foxall (1997) use a broader approach recognizing firm performance in relation to various stakeholders. They find that companies that do not take account of the interests of their stakeholders exhibit poor performance, although the relationship depends on external factors such as competition and market growth. Thus, it is argued that some kind of weighting may be necessary if all the major stakeholder groups are to be assessed.

Data and Methodology

This paper uses two types of data. One is image ratings from a Danish business periodical, Børsens Nyhedsmagasin (now Berlingske Nyhedsmagasin), which each year rates the image of leading Danish companies based on a questionnaire sent to Danish business managers. Similar ratings are undertaken by business magazines across the world, for example by Fortune Magazine. These image rates are concerned with the general image of the company and in later years also with the company's image in specific areas like employee relations, innovativeness etc. More information is given in the variable list (Table 1).

The significance and precision of the data source may of course be criticized from several perspectives. For example, the general population may perceive corporate image differently than the business community. The case for questioning business people rests on an assumption that they are better informed about other companies than the population at large, but it is clear that the causes and effects of general public image may be different and that this invites further research. A related issue is informativeness; since we do not know how well the respondents know the companies that they rate, which means that the depth of the image ratings is to some extent uncertain. This question is also addressed in the discussion since we have access to some data of the respondents' knowledge of the firm. Finally, we only have ordinal image rankings (i.e. ranking of companies from rank no. 1,2,3... from best to worst), which implies some loss of information compared to cardi-

Table 1 Variable List

Code	Variable	Measurement
Resp	Responsibility	Survey measure Rank 1–200
Finance	Financial strength	Survey measure Rank 1–200
Image	Image	Survey measure Rank 1–200
Innov	Innovation	Survey measure Rank 1–200
Knowl	Awareness (social importance)	Survey measure Rank 1–200
Com	Communication	Survey measure Rank 1–200
Qp	Quality/price	Survey measure Rank 1–200
Man	Management	Survey measure Rank 1–200
Empl	Employees	Survey measure Rank 1–200
Product	Product	Survey measure Rank 1–200
mbv (t)	Market-to-book value (time t)	Market value of equity divided by book value of equity at year end
Image ($t-1$)	Lagged image (last year's image)	Survey measure Rank 1–200
Image ($t-2$)	Image lagged twice (the year before last)	Survey measure Rank 1–200
mbv ($t-1$)	Lagged market-to-book value of equity (last year)	Market value of equity divided by book value of equity at year end
mbv ($t-2$)	Twice lagged market-to-book value of equity (year before last)	Market value of equity divided by book value of equity at year end

nal measures. The relative lack of precision may however be justified to some extent by the lack of precision of the image concept as such, which makes it easier to claim that this company's image is better than that of another company rather than to assign an absolute, abstract number to that image.

In summary, there are several fundamental questions involved in measuring corporate image, which invite future research. However, the image ratings provide one source of information, to our knowledge the only one publicly available, which can be used as a partial contribution in examining the causal relationship between firm image and stock market value.

The second dataset is financial information from Copenhagen Stock Exchange, primarily the market-to-book value of equity (market value/book value of equity, mbv), which measures the market's perception of the company that is theoretically based on the expected net present value of future dividends. This is a well-known financial performance measure, which can be regarded as a simple approximation of Tobin's *Q*. The reason why we prefer this to other measures such as accounting profitability is that it is a forward-looking variable. There is general agreement in the literature that corporate image can be regarded as an immaterial asset, which has long-run effects on corporate performance — effects which are clearly not fully captured by annualized performance measures such as return on assets. A small set of companies with negative market-to-book values was deleted from the sample because of negative accounting equity. We measure this variable at the end of the year and because of this, the natural first-hand assumption is a causal link from image ratings (observed during the year) to mbv or from mbv to subsequent observations of corporate image. However, because companies have different accounting periods we also experiment with lagged values of both image and mbv as a proxy for a direct effect measure.

The database is constructed by merging the image and stock market data over the 5-year period 1996–2001. In total, we have access to 263 joint firm year observations of image and market-to-book value and observations of 62 firms. Table 2 presents some descriptive statistics.

The survey measures range between 1 and 200 because of the way it is constructed. A complete sample of all ranked companies would have a mean around 100 and a standard deviation of 50, but because we include only listed companies there are missing values. The mean in this sample is slightly less than 100 (reflecting a moderate bias towards high image companies) and a standard deviation of slightly more than 50. The number of observations vary from 172 observations available for qp (the survey measure of quality/price ratio offered by the firm) to 303 observations for general image. Market-to-book values range from 0 to 19.8 for the complete sample at an average of 1.4.

Results

We begin our study by evaluating the relevant dimensions of corporate image, since *a priori* it is not clear whether for example a reputation for financial strength is more important to corporate performance than for example good employee relations. We employ a factor analysis, a standard tool for this type of problem, to assess the number of latent factors that may explain our survey measures. The results are reported in Table 3.

It turns out that the survey measures are so highly correlated that they cannot meaningfully be attributed (linearly) to more than one underlying factor. This one 'image factor' explains 2/3 of the variance in the 10 image measures while the second most important factor (not correlated with the first) would explain only 7 per cent of the total variance. Furthermore, this factor is highly correlated (0.98) with the general image variable reported in Table 2. For practical purposes general image and the image factor can therefore be regarded as identical.

This somewhat surprising result indicates that the companies in the sample have one image, which may be good or bad or somewhere in between, but the respondents do not appear to discriminate between various elements in this picture. For example, a company with a good general image is also perceived as having good employee relations, being financially strong, having good management, good products and good management. In practice it appears unlikely that companies would be equally good at all of these functions, but the respondents appear not to discriminate systematically between them. The most paradoxical finding appears to be that a well-known company is also likely to have a good image and to be good. In other words, increasing knowledge of the company appears to be accompanied by increasing appreciation of it and all its activities.

Since the respondents are presumably relatively well informed (being business people themselves), they should be in a better position to evaluate different aspects of company behaviour than the rest of the population. It seems unlikely, therefore, that a broader questionnaire directed at the general public would create a more complex picture. However, one should notice that as recognized by Frank (2000) managers' judgements are affected by cognitive biases and may not be accurate. Thus, our results may somehow indirectly support the critique of relying solely on methods that seeks to pool the impressions by a group of respondents, see Bromley (2002) for an analysis of what complicates an examination of firm reputation.

Table 2 Simple Statistics

Variable	*N*	Mean	SD	Minimum	Maximum
resp	220	95.8	61.0	1.0	199.0
finance	220	86.9	54.7	1.0	200.0
image	303	85.9	58.6	1.0	200.0
innov	220	97	4 56.9	1.0	200.0
know	218	87.1	58.0	1.0	200.0
com	220	98.6	59.8	1.0	200.0
qp	172	100.5	59.8	6.0	200.0
man	220	80.7	56.7	1.0	200.0
empl	220	91.9	57.9	1.0	200.0
product	220	88.8	56.4	1.0	197.0
mbv (t)	1277	1.4	1.6	0	19.8
image ($t-1$)	243	86.4	60.8	1.0	200.0
image ($t-2$)	184	83.1	60.3	2.0	200.0
mbv ($t-1$)	665	1.3	0.8	0.0	4.9
mbv ($t-2$)	539	1.3	0.9	0.1	4.9

Table 3 Factor Analysis[a]

Eigenvalues of the correlation matrix: Total = 10; Average = 1

Cumulative factor		Eigenvalue	Difference	Proportion
0.6794	1	6.79397107	6.05683856	0.6794
0.7531	2	0.73713251	0.03174862	0.0737
0.8236	3	0.70538390	0.19799979	0.0705
0.8744	4	0.50738410	0.08733379	0.0507
0.9164	5	0.42005032	0.13243631	0.0420
0.9452	6	0.28761401	0.03202057	0.0288
0.9707	7	0.25559343	0.10239719	0.0256
0.9860	8	0.15319624	0.04329668	0.0153
0.9970	9	0.10989956	0.08012471	0.0110
1.0000	10	0.02977485		0.0030

Factor pattern	Correlation with Factor 1
Resp	0.78612
Finance	0.79181
Image	0.97827
Innov	0.79016
Knowl	0.74774
Corn	0.65140
Qp	0.84789
Man	0.87550
Empl	0.86453
Product	0.86683

[a]Initial Factor Method: Principal Components. Prior Communality Estimates: ONE. 1 factor retained by the MINEIGEN criterion.

Table 5 therefore examines the relationship between this general image variable and corporate financial performance measured by the market-to-book value of equity, which expresses the stock market's opinion of the company. Table 4 presents a correlation analysis of the variables employed in Table 5.

The correlation analysis (Table 4) reveals that image and mbv are significantly negatively correlated, which makes sense since image is an ordinal (ranked) measure (i.e. a company ranked no. 3 has a worse general image than a company ranked no. 2). In addition, both image and mbv are significantly autocorrelated indicating that a high value in one period is also associated with high values in earlier and later periods. As one might expect, there is some attrition in the correlation so that autocorrelation is smaller between period t and $t-2$ than between t and $t-1$. Past values of image are also correlated with past values of mbv and *vice versa*, but surprisingly there is no attrition here: image is more correlated with past values of mbv than with the current value (and mbv is also more correlated with past values of image than with the current value).

Table 4 Pearson Correlation Coefficients

Prob > r under HO: Rho=O. Number of Observations

	mbv (*t*)	Image (*t*)	Image (*t*−1)	Image (*t*−2)	Mbv (*t*−1)	Mbv (*t*−2)
mbv (*t*)	1.00000	−0.29122	−0.33507	−0.34008	0.73013	0.55063
		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	1277	264	212	159	635	502
Image (*t*)	−0.29122	1.00000	0.76421	0.67504	−0.41300	−0.36901
	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001
	264	303	239	181	202	197
Image (*t*)	−0.33507	0.76421	1.00000	0.79173	−0.33291	−0.41791
	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001
	212	239	243	183	178	190
Image (*t*−2)	−0.34008	0.67504	0.79173	1.00000	-0.35362	−0.31487
	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001
	159	181	183	184	127	166
mbv (*t*−1)	0.73013	−0.41300	--0.33291	−0.35362	1.00000	0.75885
	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001
	635	202	178	127	665	488
mbv (*t*−2)	0.55063	−0.36901	−0.41791	−0.31487	0.75885	1.00000
	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	502	197	190	166	488	539

Further estimates by linear regression are presented in Table 5. Here, model I and VII reveal the autocorrelation detected in Table 4. Past values of image and mbv explain a little more than half of the variance in the present values. However, adding one more lagged variable — mbv (*t*−2) and image (*t*−2) respectively — does not appear to have a significant effect, since the regression coefficient of the twice-lagged dependent variables are insignificant (models II, VIII). In other words, as far as the present dataset is concerned all relevant information appears to be contained in the previous value. This is a non-trivial observation since more complicated long-term reputation effects might theoretically be at work. For example, a company with a good image historically, might conceivably be able to maintain its market value despite a short-run setback in public sentiment if stock markets had confidence in the ability of the company to regain its position. Careful analysis of longer time series might be able to detect such effects. However, for present purposes, a one-lag model appears to be a reasonable approximation of the data, while estimates that do not take this autocorrelation into account clearly miss something important. We use this observation in the following estimates.

Models III, IV and IX reveal cross-sectional and quasi cross-sectional relationships between mbv and image (i.e. between present values of both and between present values of one and lagged values of the other). These estimates again reveal a negative relationship.

The best available test for causality is therefore to condition with past values of the dependent variables (as models I, II, VII and VIII indicate to be the correct approach). This approach is equivalent to a test for Granger causality (Granger, 1969) in which causality is detected if changes in one variable systematically predict subsequent changes in another one. We implement this in estimating the models:

$$\text{Model VI.} \quad Q_{it} = \alpha_1 + \beta_1 \,\text{Image}_{it} + \beta_2 \, Q_{i(t-1)} + \mu_{1,it}$$

$$\text{Model X.} \quad \text{Image}_{it} = \alpha_2 + \beta_3 \,\text{Image}_{i(t-1)} + \beta_4 \, Q_{i(t-1)} + \mu_{2,it}$$

Here Q_{it} is market-to-book value of firm i at time t. Image_{it} is the image rating of firm i at time t and the error terms $\mu_{j,it}$ are assumed to be independent with variances σ_j^2. (α_1, β_1, Image_{it} β_2, α_2, β_3 and β_4 are regression parameters. The model is indexed as (j = 1,2; t = 1996,.., 2001; i = 1,2...62 firms). In these models if $\beta_1 \neq 0$, $\beta_4 = 0$ we infer unidirectional Granger causality from Image to firm value (Q). In this case, including Image as a predictor for firm value will decrease the prediction error (or increase explained variance). Similarly, if $\beta_1 = 0$, $\beta_4 \neq 0$ we infer unidirectional Granger causality from Q to Image. If $\beta_1 \neq 0$, $\beta_4 \neq 0$ we infer bi-directional Granger causality between Q and Image.

Models V and VI indicate no significant effect of image or past image on mbv. In contrast, model X reveals a significant negative effect of lagged values of Q on company image. The implication of this is that changes in market value appear to cause changes in corporate image, while corporate image has no systematic effect on a company's stock market value.

We cross-checked these results in a number of ways. We controlled for size (assets) and industry effects (using the five main industry groups used by the

Table 5 Relationship between Market-to-book Value and Corporate Image[a]

Independent variables	Dependent variable									
	Market-to-book value (*t*)						Image			
	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII	Model IX	Model X Intercept
Intercept										
mbv (*t*)	0.195***	0.119***	2.724***	2.964***	0.032 ns	−0.056 ns	24.065***	16.133***	135.1***	47.469***
mbv(*t*−1)	0.851***	0.814***			1.000***	1.004***			−23.0***	−11.144**
mbv (*t*−2)		0.062 ns								
Image (*t*)			−0.010***			0.001 ns				
Image (*t*−1)				−0.012***	−0.000 n.s.		0.755***	0.694***		0.742***
Image (*t*−2)								0.091 n.s.		
Number of observations	634	462	263	211	165	188	238	180	201	173
F-value	722.7***	209.3***	24.2***	26.6***	123.1***	141.6***	332.7***	172.15***	41.1***	159.1***
R^2	0.533	0.476	0.084	0.112	0.600	0.603	0.584	0.659	0.171	0.650

[a]***1%, **5%, *10% significance, respectively; ns indicates not significant.

Copenhagen Stock Exchange) and we still found that firm value influences image rather than *vice versa*. Company size is clearly an important control since large companies tend to have a relatively better image, presumably partly because they are better known to the public.

Breaking down the sample by these broad industry categories we found that a significantly positive effect of a better image in banking and manufacturing, but not in services where it was in fact close to being significantly negative. We hesitate to draw a definite conclusion based on this relatively small sample, but the findings indicate that industry and possibly firm specific effects are important.

The negative effect of lower firm value on corporate image was significant in all the main industries.

We also checked for Granger-causality between image and firm performance measured by accounting results (return on assets) and again found that better financial performance enhances a company's image, but not *vice versa*. This relationship is understandably given that the effects of image on profitability would presumably show up only in the long run. This is one main reason why our preferred performance measure is firm stock value, which presumably captures expected long-term effects on cash flow.

Finally, we also did regressions on first differences, i.e. changes in firm value as a function of changes in firm image. Here we found a strong effect of changes in firm value on firm image, while changes in firm image did not significantly influence changes in firm value using the standard 5 per cent level of significance. However, the effect was significant at the 10 per cent level indicating the possible existence of a weaker effect from image to value.

Discussion and Conclusion

Our results seem somehow to challenge conventional wisdom since we find that HI (reputation improves performance) is not confirmed, but on the other hand we cannot reject H2, i.e. corporate financial performance affects reputation. As mentioned, our methodology is to some extent similar to Roberts and Dowling (2002), who found that firms with relatively good reputations are better able to sustain superior profits over time. We certainly endorse the idea that firm reputation is generally a valuable asset, but our findings indicate that investments in reputation assets are not always profitable just like increases in physical capital are not always profitable. This does not mean that company managers should not be concerned about the company's image, but rather that boosting a company's image is no sure way to financial success.

One of the ways in which a firm may seek to influence their image is the arrangement of investor meetings/presentations. Firms frequently arrange investor meetings in order to inform investors about the firm and its future prospects according to management. Such arrangements are obviously associated with costs since management forego profitable projects when planning and holding these meetings/presentations. These initiatives naturally belong within the firm's investor relation department, which handles the firm's communication strategy, including reputation management *vis-à-vis* the investment community. One way to interpret our results is that if management is devoted to maximizing shareholder value, such initiatives should be subordinated to a balanced assessment of whether the net cost/benefits serve the interests of shareholders. In other words management should be concerned with improving overall performance and thereby influencing the firm's image. The same calculus should apply to other public relation activities such as employee relations, customer relationship management, general corporate advertising and media exposure strategies.

Using stock market related performance measure is not always without problems as is the case with any other performance measure, especially accounting measures. However, when stock prices are very volatile and contain much 'noise' using the market value of equity as a component in the applied performance measure may not be without problems. This is especially true when the time dimension of stock prices is short. But our dataset covers the period from 1996 to 2001, which should be long enough to get more reliable data. Moreover, we found similar effects on accounting data.

To summarize, our results seem somehow to challenge conventional wisdom since we find that corporate financial performance affects reputation rather than *vice versa*. One may therefore question the actions taken by management seeking to improve the firm's image in order to influence the stock market, since such initiatives do not seem to be reflected in performance, when performance is linked to the notion of shareholder value. Thus, both image and firm value are significantly serially correlated indicating that past values of image and firm value affect present values.

There is no denying that a corporate reputation is vital for the long run survival of the firm. However, our findings indicate that a strong image will result if management is able to increase performance. The implication of our results is therefore that management should care about the firm's reputation if it influences business profitability and growth, but not because of a direct impact on the stock market. This has implications for the resources that companies devote to customer vs investor relations.

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CASPAR ROSE, *Department of Finance, Copenhagen Business School, Howitzvej 60, 2000 Copenhagen F, Denmark. E-mail: cr.fi@cbs.dk*

Caspar Rose is Assistant Professor in the Department of Finance at Copenhagen Business School. His research focuses on Corporate Governance and Law and Economics dealing with the interaction between law and finance. He analyses legal issues by the use of econometrics.

STEEN THOMSEN, *Department of International Economics and Management, Copenhagen Business School, Howitzvej 60, 2000 Copenhagen F, Denmark. E-mail: st.int@cbs.dk*

Steen Thomsen is Professor in the Department of International Economics and Management, Copenhagen Business School, and Chairman of the Danish Corporate Governance Network. He is also Chairman of GCI Future, which collected the image ratings used in this article. His research focuses on corporate governance.